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10/593,024	01/23/2008	Ronald G. McKew	08270009AA	5752
36743 7590 12/30/2008 WHITHAM, CURTIS & CHRISTOFFERSON & COOK, P.C. 11491 SUNSET HILLS ROAD SUITE 340 RESTON, VA 20190				
EXAMINER JONATIS, JUSTIN M				
ART UNIT		PAPER NUMBER		
3752				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/593,024

**Applicant(s)**

MCKEW, RONALD G.

**Examiner**

JUSTIN JONAITIS

**Art Unit**

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date 09/15/2006

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. The claims appear to be a list of the elements of the invention without a clear explanation of each element's placement. The structure that goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. Applicant is advised to completely review the claims for errors.
3. Claims 10-15 recite the limitation "diverging passage." There is insufficient antecedent basis for this limitation in the claims.
4. Claims 16-19 recite the limitation "transition passage." There is insufficient antecedent basis for this limitation in the claims.
5. Claims 20-24 recite the limitation "transition passage" and "converging passage." There is insufficient antecedent basis for this limitation in the claims.
6. Claims 25 & 29 recite the limitation "liquid inlet." There is insufficient antecedent basis for this limitation in the claims.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1, 25-29, 33 and 34 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent #5,520,332 to Gaidis et al.

9. In re claim 1, Gaidis et al. discloses a slurry spraying system including a **gun means (Distributor (S))**, a **spray nozzle (Nozzle (4))** and a **conduit (conduit (1))** a **pump means to move dry particulate (inherent to incoming slurry)** to move particulate towards the nozzle. Between the gun means and the nozzle is a **mixing device (Air Injector (5) and Fluid Check Valve Injector (10))**, which mixes and feeds the mixture to the nozzle for dispensing.

10. In re claim 25, as best interpreted by the examiner, Gaidis et al. discloses the invention as described above including the **liquid inlet (Fluid Check Valve Injector (10))** could be a liquid ring

11. In re claims 26, and 27, Gaidis et al. discloses the invention as described above including the mixing device being able to be used in the field and being created to be not too heavy to make it unwieldy [column 5, lines 14-16]. Therefore the dimensional limitations of claims 26 and 27 would inherently be true in a hand held spray device.

12. In re claim 28, Gaidis et al. discloses the invention as described above including the sprayer applying a pressure of 14 psi [about 100 kpa] to the slurry[column 4, lines 55-56].

13. In re claim 29, as best interpreted by the examiner, Gaidis et al. discloses the invention as described above including the liquid inlet having it's own supply (storage tanks (16)) and pressure source (compressor (14)),

14. In re claim 33, Gaidis et al. discloses the invention as described above including the system capable developing a pressure of 85 psi (~586 KPA) and regulated to desired level by needle valve (20).

15. In re claim 34, Gaidis et al. discloses the invention as described above including the ability to add liquid to the slurry at the nozzle upon emission from the nozzle (nozzle is open to atmosphere).

16. Claims 35-40 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent #4,666,083 to Yie.

17. In re claim 35, Yie discloses a mixing device to perform a slurry, the device including an **inlet (feed means (35))** having a larger internal cross sectional area than a **hose (feed tube (36))** connected to the device to deliver dry particulate, a **diverging passage** and a **transition passage (orifice cone(65))** and a **liquid inlet (Inlet(11))** located in the diverging passage.

Art Unit: 4159

18. In re claim 36, as best interpreted by the examiner, Yie discloses the invention as described above including the mixing device formed from liners which include the diverging passage, transition passage and converging passage.

19. In re claims 37 and 38, as best interpreted by the examiner, Yie discloses the invention as described above including the liners being coupled together by pressure applied by cap (40) which couples the liners together upon being screwed into the threads.

20. In re claim 39, as best interpreted by the examiner, Yie discloses the invention as described above including the transition passage having a substantially constant cross section.

21. In re claim 40, as best interpreted by the examiner, Yie discloses the invention as described above including the replacement of the mixing chamber's transitional component with only the tapered central passage (52) [See Figure 1] in an alternate embodiment. This would make the transitional component have a converging shape.

***Claim Rejections - 35 USC § 103***

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 4159

23. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

24. Claims 2-23, 30-32, and 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent #5,520,332 to Gaidis et al. in view of U.S. Patent #4,666,083 to Yie.

25. In re claim 2, Gaidis et al. discloses the invention as described but fails to disclose an expansion chamber having a diverging passage. Yie teaches that it is known to make an **expansion chamber (Mixing Chamber (67))** that has a **diverging passage (orifice cone (65))**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the mixing chamber as taught by Yie in order to change the flow pattern and promote better mixing.

26. In re claim 3, Yie discloses the invention as described above including the device having including a **transition passage (Cylindrical portion see Figure 2)** downstream of the diverging passage.

27. In re claim 4, Yie discloses the invention as described above including a liquid inlet located on the diverging passage.

28. In re claim 5, Yie discloses the invention as described above including the liquid inlet there is a liquid inlet nozzle.

29. In re claim 7, Yie discloses the invention as described above including the nozzle being aligned on the central longitudinal axis of the mixing device.

30. In re claim 8, Gaidis et al. in view of Yie does not disclose the nozzle being aligned so the central longitudinal axis is skewed relative to the central longitudinal axis of the mixing device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to relocate the liquid tube.

31. In re claim 9, as best interpreted by the examiner, Yie discloses the invention as described above including a **converging passage (tapered central passage (52))** downstream of the transition passage.

32. In re claim 10, as best interpreted by the examiner, Yie discloses the invention as described above including the inlet to the diverging passage having a larger cross sectional area than the cross sectional area of the **conduit delivering the particulate to the gun (particulate inlet (66))**.

33. In re claim 18, as best interpreted by the examiner, Yie discloses the invention as described above including the transition passage having a substantially constant cross section.



34. In re claim 19, as best interpreted by the examiner, Yie discloses the invention as described above including the replacement of the mixing chamber's transitional component with only the tapered central passage (52) [See Figure 1] in an alternate embodiment. This would make the transitional component have a converging shape.

35. In re claim 20, as best interpreted by the examiner, Yie discloses the invention as described above including the transition passage terminating in an outlet passage of substantially constant cross section. The orifice cone is retained in the nozzle body (20) and therefore will retain its cross section at its outlet passage termination point.

36. In re claim 21, as best interpreted by the examiner, Yie discloses the invention as described above including the converging passage having a cross sectional area which is approximately equal to the cross sectional area of the passage in a conduit to be connected to the outlet (Figure 2 shows through passage (51) and through passage (42) are **approximately** the same cross sectional area.

37. In re claim 35, Gaidis et al. discloses a mixing device to perform a slurry, the device including an inlet

38. In re claims 6, 11-15, 17, 22-24, & 30-32 Gaidis et al. in view of Yie discloses the invention as described above, but fails to disclose the specific dimensions of its components. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the correct size components and construct the apparatus at a size best suited for it's intended use, since it has been held that where

the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. For example, an air compressor of higher capacity could be used to increase the flow rate at a component. Please note that in the instant application, paragraphs 10-25, applicant has not disclosed any criticality for the claimed limitations.

### ***Conclusion***

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent #5,005,768 to Herfurth which discloses a spray nozzle with similar components, U.S. Patent #2,543,517 to Anderson which discloses an apparatus for mixing multiple liquids substances. U.S. Patent #6,746,146 to Thomas which discloses a mixing device using an angled inlet. U.S. PG-Pub #2007/0267512 to Raabe which discloses many similar components. U.S. Patent #4,768,710 to Sperber discloses a device with similar components for mixing multiple substances.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN JONAITIS whose telephone number is (571)270-5150. The examiner can normally be reached on Monday - Thurs 6:30am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUSTIN JONAITIS/  
Examiner, Art Unit 3752

/Len Tran/

Supervisory Patent Examiner, Art Unit 3752